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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,204	09/14/2004	Takashi Shimono	258908US2SXPCT	5099

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EXAMINER

SONG, HOON K

ART UNIT PAPER NUMBER

2882

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	10/507,204		SHIMONO ET AL.	
	Examiner		Art Unit	
	Hoon Song		2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

The indicated allowability of claim 4 is withdrawn in view of the newly discovered reference(s) to Loxley et al. (US 6778633B1). Rejections based on the newly cited reference(s) follow.

### ***Claim Objections***

Claims 1 and 9-11 are objected to because of the following informalities:

In claim 1 at line 8, "the at least on magnet" should read --the at least one magnet portion--.

In claim 9 at line 3-6, "a selected pair of electromagnets is energized and the irradiation position on the target of the electron beam is controlled, and after a set time has elapsed, another set of electromagnets is energized" is functional or operational language. The structure which goes to make up the device must be clearly and positively specified, for example a control means that controlling the magnates as claimed (note: a similar informality exists in claim 11).

In claim 10 at line 5, "the focusing electrode" should read --one of the focusing electrodes--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

Art Unit: 2882

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Loxley et al. (US 6778633B1).

Regarding claim 1, Loxley teaches an x-ray apparatus comprising:

a cathode (3) which irradiates an electron beam (8);

a target (4) which is irradiated by the electron beam and generates x-rays (6);

and

at least one magnet portion (16) which moves the irradiation position of the electron beam that is irradiated on the target; and

wherein the at least one magnet portion (16) is disposed rotatably about the axial direction of the electron beam and the irradiation position of the electron beam is changed due to this rotation of the at least one magnet portion (column 5 line 29-31).

Regarding claim 2, Loxley teaches that the target (4) is disposed so as to be fixed with respect to the cathode (figure 4).

Regarding claim 3, Loxley teaches that the magnet portion (16) generates a magnetic field which traverses the electron beam (figure 4).

Regarding claim 5, Loxley teaches that the at least one magnet portion has a pair of magnets which are separated in the diameter of the rotation and oppose different magnetic poles (quadruple magnet, column 5 line 30).

Regarding claim 6, Loxley teaches that the at least one magnet portion comprises first and second magnet portions disposed so as to oppose each other and the electron beam interpose by the first and second magnet portions (quadruple magnet, column 5 line 30).

Regarding claim 7, Loxley that the at least one magnet portion comprises a plurality of pairs of opposing electromagnets between which the electron beam is interposed, and control means for changing the synthesized magnetic field formed by these electromagnets (quadruple magnet, column 5 line 30-33).

Regarding claim 8, Loxley teaches that the control means controls at least one of the direction of the energizing amount and the current plurality of pairs of electromagnets (quadruple magnet, column 5 line 30-33).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Loxley.

Regarding claim 10, Loxley teaches a plurality of focusing electrodes (14, 45) between the target (4) and the cathode (3) (figure 1).

Loxley fails to teach the position of the at least one magnet portion in the axial direction of the electron beam is between the focusing electrodes which is closest to the target side and the cathode.

Applicant has not stated any criticality associated with the position of the least one magnet portion nor that it solves any long standing problem in the art. Consequently, the position of the at least one magnet portion is considered to be a matter of obvious design choice based on routine experiments and one having ordinary skill in the art would be motivated to choose the position of the magnet in order to structurally balance the system.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-3 and 5-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

Claims 11-12 are allowed over prior art.

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 9 and 11-12, the prior art fails to teach an x-ray apparatus having a plurality of pairs of opposing electromagnets rotatable about the axial direction of the electron beam, wherein a selected pair of electromagnets is energized and the irradiation position on the target of the electron beam is controlled, and after a set time related to the service life of the target has elapsed, another set of electromagnets is energized as claimed in dependent claim 9 and independent claim 11.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 9:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

5/3/06  
HKS

  
EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER